

REMARKS

In the Office Action identified above,¹ the Examiner:

- a) rejected claims 1-15 under 35 U.S.C. § 101 for being directed to non-statutory subject matter;
- b) rejected claims 1-10, 13, and 15 under 35 U.S.C. § 102(b) as being anticipated by Sato et al. (US 6,317,198 B1, "Sato");
- c) rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of the Examiner's Official Notice;
- d) rejected claims 12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Hibbs et al. (US 5,973,771, "Hibbs");² and
- e) rejected claims 16-22 under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Hibbs and further in view of Sasaya et al. (US 6,262,793 B1, "Sasaya").³

In the present Amendment, Applicants have amended claims 1 and 16 to more appropriately define their invention. Claims 1-22 are pending in the above-captioned application.

At the outset, Applicants note that the Examiner returned the initialed PTO/SB/08 forms with Office Action mailed January 11, 2006. However, foreign patent

¹ The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

² Applicants note that in page 5 of the Office Action, the Examiner initially indicates that claims 12, 14, and 16-21 are rejected over Sato in view of Hibbs, but only discusses claims 12 and 14. Since claims 16-21 are rejected over Sato in view of Hibbs and further in view of Sasaya at page 6 of the Office Action, Applicants assume that the Examiner intended to include only claims 12 and 14 in the § 103(a) rejection based on Sato in view of Hibbs.

³ Applicants assume that the Examiner intended to include claim 22 in the rejection based on Sato, Hibbs, and Sasaya, since claim 22 is discussed at page 8 of the Office Action along with claims 16-21.

documents Chinese Patent Application No. 90107655, listed in IDS dated December 7, 2004, and CN 1136708 A, listed in IDS dated June 28, 2005, were not initialed by the Examiner. Applicants submit that, although an English language translation was not provided for each of these foreign patent documents, an English translation of the foreign Office Action citing the document and setting forth the relevance thereof was enclosed. A copy of the PTO/SB/08 forms are therefore submitted herein. Applicants respectfully request that the Examiner indicate that these documents were considered.

Claim 16 has been amended to recite, in part, “a second lens member arranged into an optical path between the first lens member and the substrate, the second lens member being a lens array disposed in a plane perpendicular to the optical path” (emphasis added). Support for these claim changes may be found in the specification, for example, at page 32, line 26 to page 33, line 10.

Regarding the Section 101 rejection of claims 1-15, the Examiner contends that claim 1 does not “constitute a tangible result.” See Office Action at page 2. Applicants disagree with the Examiner’s arguments and conclusions regarding the practical application of claim 1, however, in an effort to advance prosecution of this case, Applicants have amended claim 1 to recite, in part,

“inspecting a pattern obtained by developing the photosensitive substrate; and
determining an illumination axis offset of the exposure apparatus based on the pattern.”

According to the U.S. Patent and Trademark Office’s Interim Guidelines for Examination of Patent Applications, “[t]he claimed invention as a whole must be useful and accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.” “ State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02.

Applicants note that the amendment to claim 1 more clearly defines a useful, concrete and tangible result (i.e. the determination of an illumination axis offset of an exposure apparatus). Accordingly, Applicants request withdrawal of the Section 101 rejection of claims 1-15.

Applicants respectfully traverse the rejection of claims 1-10, 13, and 15 under 35 U.S.C. § 102(b) as being anticipated by Sato. In order to properly establish that Sato anticipates Applicants' claimed invention under 35 U.S.C. § 102, each and every element of each of the claims in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." See M.P.E.P. § 2131, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

Sato fails to disclose each and every element of claim 1. Sato does not disclose, at least, the claimed inspection method including "illuminating a first region on the inspection photosensitive substrate ... and illuminating a second region on the inspection photosensitive substrate" (emphasis added), as recited in claim 1. The Examiner alleges that Sato discloses, in Figs. 3A and 3B, "illuminating a first region (i.e. region before pupil)...and illuminating a second region (i.e. region after pupil)." See Office Action at page 3. However, Sato's alleged "region before pupil" and "region after pupil" are not located on wafer 5, but, rather, are located along the light path between the illumination optical system 1 and the wafer 5. See Figs. 3A and 3B. Therefore, Sato fails to teach the claimed "illuminating a first region on the inspection

photosensitive substrate ... and illuminating a second region on the inspection
photosensitive substrate,” as recited in amended claim 1.

Accordingly, amended claim 1 is allowable over Sato, and claims 2-10, 13 and 15 are allowable at least due to their dependence from claim 1. Thus, Applicants request that the 35 U.S.C. § 102(b) rejection of claims 1-10, 13 and 15 should be withdrawn.

Applicants respectfully traverse the Examiner's rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of the Examiner's taking Official Notice. Applicants further traverse the Examiner's taking of Official Notice, and submit that, pursuant to M.P.E.P. § 2144.03, the Examiner must provide a reference in support of the assertion of Official Notice. Otherwise, the rejection should be withdrawn.

In any event, a *prima facie* case of obviousness has not been established.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 4 (October 2005), p. 2100-134.

Claim 11 depends from claim 1 and thus requires each and every element recited in claim 1. A *prima facie* case of obviousness has not been established because, among other things, Sato and the Examiner's Official Notice, taken alone or in combination, fail to teach or suggest each and every element recited in claim 1 and required by dependent claim 11. As discussed above in regard to the Examiner's

§ 102(b) rejection of claim 1, Sato fails to teach or suggest the claimed “illuminating a first region on the inspection photosensitive substrate ... and illuminating a second region on the inspection photosensitive substrate.” The Examiner’s alleged well-known use of silicon wafer, even if correct, still fails to cure the above-noted deficiencies of Sato. Accordingly, the Examiner’s proposed combination of Sato and the Examiner’s Official Notice does not teach or suggest all the elements recited in claim 1 and required by dependent claim 11. Therefore, claim 11 is allowable over Sato and the Examiner’s Official Notice, and the rejection of claim 11 under 35 U.S.C. § 103(a) should be withdrawn.

Applicants respectfully traverse the Examiner’s rejection of claims 12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Hibbs. Claims 12 and 14 depend from claim 1 and thus require each and every element recited in claim 1. A *prima facie* case of obviousness has not been established because, among other things, Sato and Hibbs, taken alone or in combination, fail to teach or suggest each and every element recited in claim 1 and required by dependent claims 12 and 14. As discussed above in regard to the Examiner’s 35 U.S.C. § 102(b) rejection of claim 1, Sato fails to teach or suggest the claimed “illuminating a first region on the inspection photosensitive substrate ... and illuminating a second region on the inspection photosensitive substrate.” Hibbs discloses illumination through a pupil imaging reticle to form an illumination pattern. See Hibbs, Fig. 1. The Examiner alleges that Hibbs teaches a “lens member between illumination optical system and the projection optical system.” See Office Action at page 5. Applicants note, however, that Hibbs is entirely silent as to any disclosure of illuminating a first region and a second region, and thus

necessarily fails to teach or suggest the claimed “illuminating a first region on the inspection photosensitive substrate” and “illuminating a second region on the inspection photosensitive substrate,” as recited in amended claim 1. Thus, Hibbs does not overcome the above-noted deficiencies of Sato, and claims 12 and 14 are allowable at least due to their dependence from claim 1.

Applicants respectfully traverse the Examiner's rejection of claims 16-22 under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Hibbs and further in view of Sasaya. A *prima facie* case of obviousness has not been established because, among other things, Sato, Hibbs, and Sasaya, either taken alone or in combination, fail to teach or suggest each and every element recited in amended claim 16. In particular, each of the cited references fails to teach the claimed exposure apparatus including “a second lens member arranged into an optical path between the first lens member and the substrate, the second lens member being a lens array disposed in a plane perpendicular to the optical path,” as recited in amended claim 16.

Hibbs discloses, in Fig. 1, a single condenser lens 7 located between an illuminator source 2 and a reticle 8. Since Hibbs only teaches a single lens, Hibbs cannot teach a second lens, and thus necessarily fails to teach the claimed “second lens member arranged into an optical path between the first lens member and the substrate.”

Moreover, Sasaya discloses a projection exposure apparatus in which toric optical members are arranged between a reticle 35 and a substrate 38. See Sasaya, col. 13, lines 36-56, Figs. 12 and 14D. However, none of the toric optical members 1A, 2A, 1B, and 2B constitutes a lens array disposed in a direction perpendicular to the

optical path shown in Figs. 12 and 14D. Rather, each is arranged in a direction parallel to the optical path between the reticle 35 and the substrate 38. See Fig. 14D. Thus, Sasaya also fails to teach the claimed "second lens member arranged into an optical path between the first lens member and the substrate, the second lens member being a lens array disposed in a plane perpendicular to the optical path" (emphasis added).

Therefore, both Hibbs and Sasaya fail to teach at least the claimed "second lens member, " and, as noted above, the Examiner concedes that Sato is silent regarding a lens member. See Office Action at page 6. Therefore, claim 16 is allowable over the Examiner's proposed combination of Sato, Hibbs, and Sasaya, and claims 17-22 are also allowable at least due to their dependence from claim 16.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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By: _____



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